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INDUSTRIAL FISHERY PRODUCTS

SITUATION & OUTLOOK

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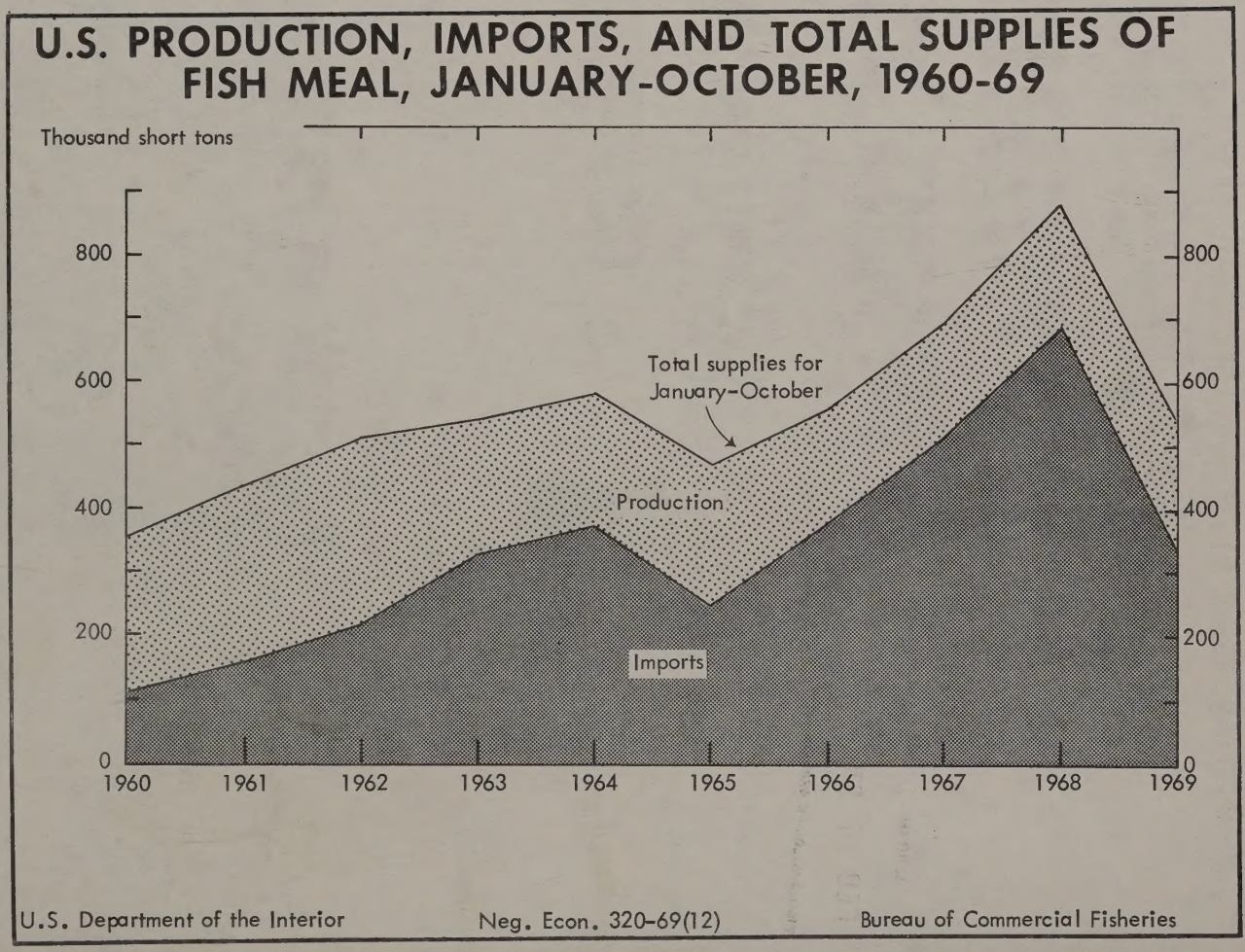
U.S. PRODUCTION, IMPORTS, AND TOTAL SUPPLIES OF FISH MEAL, JANUARY-OCTOBER, 1960-69
Thousand short tons
800
600
400
200
0
Total supplies for January-October
Production
Imports
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
U.S. Department of the Interior
Neg. Econ. 320-69(12)
Bureau of Commercial Fisheries

Figure 1

INDUSTRIAL FISHERY PRODUCTS

SITUATION AND OUTLOOK

Approved by the Bureau of Commercial Fisheries Situation and Outlook Board, January 21, 1970

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SUMMARY

FISH MEAL

Total supplies of fish meal in the United States in January-October 1969 (excluding stocks, which are not reported) were 543,000 tons[1]--down 39 percent from 1968 and down 15 percent from the 1964-68 average for that period. Domestic production of 202,100 tons was up only slightly over 1968, and imports of 340,800 tons were less than half 1968 imports in the same period. Imports from Peru were 211,200 tons--down more than one-third from the 1964-68 average. Higher prices for fish meal cut down imports from all countries except Canada.

[1]Short tons are used in this report unless otherwise specified.

Total FEO[2] exports and FEO exports to the United States were down the first 10 months of last year, but exports to the EC (European Communities)[3] countries were up. The EC countries received an estimated 39 percent of FEO exports in the first 10 months of last year--compared with 33 percent the year before. About 11 percent of FEO exports came to the United States--compared with 22 percent in 1968.

Even though U.S. broiler placements in the first quarter of 1970 are expected to be 10 to 15 percent over last year, if prices of fish meal do not average below $185 per ton in the first quarter, we estimate that less than 90,000 tons of fish meal will be used. Last year apparent use of fish meal in the first quarter was 109,600 tons and the year before was 204,300 tons. Use in the first quarter of last year was low because of the drop in supplies caused by the longshoremen's strike. The use of fish meal in the United States in the first quarter is tied primarily to the price of fish meal, which in turn is influenced by the level of stocks in Peru and other FEO countries. At the current time, the stock situation in those countries indicates that prices will not fall markedly below their current level. However, a significant increase in landings of anchoveta in Peru could build up supplies in that country, thereby creating a downward pressure on prices.

FISH SOLUBLES

Total supplies of fish solubles in January-October were about 73,800 tons--11 percent more than in the same period in 1968 but 7 percent less than the 1964-68 average. Nearly all of the solubles were produced domestically. Imports of 100 tons in the first 10 months were the lowest on record.

Prices of menhaden solubles as quoted by brokers in New York City rose from an average of $46.25 per ton in the first part of May to $52.50 per ton in November and December. These increasing prices indicated an increased demand for solubles in the last half of the year.

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[2] Fishmeal Exporters Organization; member countries are Angola, Chile, Iceland, Norway, Peru, South Africa, and South West Africa.

[3] Also referred to as the Common Market; formerly European Economic Community. Member countries are Belgium, France, West Germany, Italy, Luxembourg, and the Netherlands.

The use of fish solubles in the first quarter of 1970 will depend on the extent to which producers of fish meal and solubles have a ready market for their meal. If producers can sell their meal at the higher prices, they may return some solubles to the meal press cake. Last year, apparent use of solubles in the first 3 months was 3,700 tons and the 1964-68 average was 5,300 tons.

FISH OIL

With U.S. consumption and exports of fish oil heavier than production in the first 10 months, stocks of fish oil on November 1 were about 8 million pounds lower than at the beginning of the year. Production in the first 10 months was about 156 million pounds. About 28 million pounds were used in industrial products other than animal feed, and 135.7 million pounds were exported. The exports were over three times more than exports in 1968 and 60 percent more than the 1964-68 average.

Prices of fish oil increased from an average of 5.25 cents per pound the first week of August to 8.5 cents per pound in November and December. These high prices together with relatively heavy domestic use and exports indicated a favorable demand for U.S. fish oil. Consumption of fish oil in the first quarter of 1970 is estimated to be 9 to 11 million pounds. This does not include the amount used in animal feed. In the first quarter last year, 8 million pounds were used in products other than animal feeds.

Exports of fish oil in the first quarter will depend on prices in European countries. When compared with the past few years, current prices of fish oil are high relative to prices of most other competing oils. Current price relationships indicate that about the same amount of fish oil will be exported this year in the first quarter as last--30 to 35 million pounds.

FISH MEAL

REVIEW: JANUARY-OCTOBER 1969

Supply

Fish Meal Supplies--Down Nearly Two-Fifths From 1968

Total U.S. supplies of fish meal in January-October 1969 (excluding stocks, which are not reported) were 543,000 tons--down 39 percent from 1968 and down 15 percent from the 1964-68 average for that period (table 1 and fig. 1). Domestic production was up only slightly over the previous year, and imports were only half as great as imports in the same 10-month period in 1968. As a result of the decline in imports, the share of total supplies provided by domestic production in the first 10 months increased from 23 percent in 1968 to 37 percent in 1969.

Supplies in November were an estimated 19,000 tons--less than 1/4 of supplies in November 1968. Imports were down again so that domestic production was 65 percent of total supplies compared with only 17 percent in November 1968.

Table 1.--Total fish meal available in the United States: production plus imports, by month, 1962-69[1]

Month	1962	1963	1964	1965	1966	1967	1968[2]	1969[2]
	Thousand short tons							
January	28.3	20.8	33.1	19.2	18.1	47.7	93.4	29.6
February	22.4	43.0	37.6	28.4	27.5	48.3	51.8	30.8
March	22.7	43.2	43.2	57.5	39.2	79.1	59.2	49.2
April	35.8	35.0	64.1	51.0	50.8	60.0	74.0	70.6
May	65.8	71.4	91.6	55.6	55.3	56.2	89.4	73.9
June	87.6	53.8	83.5	93.1	82.6	74.1	111.6	86.3
July	81.5	82.1	74.1	68.8	85.5	84.0	136.0	74.1
August	68.7	87.7	70.0	55.8	90.8	108.4	123.6	49.7
September	45.4	60.0	56.9	27.9	66.5	76.0	78.9	41.4
October	48.7	49.9	28.3	17.1	46.4	61.5	68.9	37.4
November	22.1	30.8	36.4	17.8	54.7	78.4	84.9	19.0
December	21.7	39.7	45.5	21.0	42.8	79.2	110.2	
Total[3]	550.7	617.4	664.3	513.0	660.2	852.9	1,081.9	

[1]Excludes meal made from shellfish.
[2]Preliminary.
[3]Figures may not add to total because of rounding.

Production in January-October--About the Same as 1968

The United States produced about 202,100 tons of fish meal in the first 10 months of 1969--only slightly more than the year before and the 1964-68 average (tables 2 and 3). Nearly three-fourths of the 10-month production came from menhaden--compared with about two-thirds the previous year and the 1964-68 average for the 10-month period (table 3). Over half of the remaining meal was made from anchovies and tuna and mackerel scrap.

Table 2.--U.S. production of fish meal by month, 1962-69[1]

Month	1962	1963	1964	1965	1966	1967	1968[2]	1969[2]
	Thousand short tons							
January	2.9	2.3	2.1	3.2	2.8	5.7	2.5	2.4
February	3.6	2.9	2.3	2.9	2.3	3.9	2.7	3.2
March	4.2	2.7	3.1	3.8	5.7	4.9	4.5	4.0
April	9.4	8.4	8.1	11.3	11.3	10.1	11.8	12.6
May	40.5	40.3	32.1	25.1	20.3	17.2	19.0	28.8
June	61.2	35.3	49.0	48.6	36.9	33.5	30.7	32.6
July	55.6	38.9	45.2	50.1	36.5	36.4	44.2	37.3
August	40.4	43.7	33.5	42.0	31.4	33.6	36.2	31.4
September	31.7	24.7	22.8	21.1	23.2	20.3	29.6	32.2
October	36.0	18.5	8.6	12.3	11.0	11.4	20.2	17.7
November	10.2	13.4	10.7	12.1	18.9	15.4	14.2	12.4
December	2.7	10.0	7.7	9.8	12.0	9.0	11.0	
Total[3]	298.4	241.1	225.2	242.3	212.4	201.4	226.6	

[1]Excludes meal made from shellfish.
[2]Preliminary.
[3]Figures may not add to total because of rounding.

Table 3.--U.S. production of fish meal by raw material source, January-October, 1964-68 average, 1968, and 1969

Source	1964-68 average		1968		1969[1]	
	Thousand short tons	Percent	Thousand short tons	Percent	Thousand short tons	Percent
Alewives	2.4	1.2	1.6	0.8	[2]	-
Groundfish	7.2	3.6	6.5	3.2	[2]	-
Herring	10.9	5.5	13.8	6.9	[2]	-
Menhaden[3]	130.6	66.2	127.9	63.5	150.3	74.4
Tuna, mackerel, and anchovies	23.4	11.9	25.9	12.9	28.9	14.3
Unclassified	22.8	11.6	25.6	12.7	22.9	11.3
Total[4]	197.4	100.0	201.4	100.0	202.1	100.0

[1]Preliminary.
[2]Included in "unclassified."
[3]Includes a small quantity of other species.
[4]Figures may not add to total because of rounding.

Landings of menhaden and production of meal from those landings in the first 10 months of 1969 were the highest since 1965 (tables 4 and 5, figs. 2 and 3). Menhaden landings were 1.42 billion pounds in the 10-month period--18 percent over landings in the same period in 1968 and 15 percent more than the 1964-68 average. About 150,300 tons of meal were produced from these menhaden in January-October 1969--giving an average yield of 21 percent (21 tons of meal from every 100 tons of menhaden). The Gulf Coast area accounted for about four-fifths of the menhaden landings and meal production--compared to an average of about two-thirds over the last 5 years.

The menhaden fishing season in the Gulf began in April and ended in October. In this 7-month period, fishermen landed 1.16 billion pounds of menhaden--the highest landings on record and 10 percent greater than the previous high in 1962 (table 5). Production of menhaden meal in the Gulf Coast area was 121,000 tons--also the highest on record.

Table 4.--Production of menhaden meal by area and by month, 1962-69[1]

Month	1962	1963	1964	1965	1966	1967	1968	1969[2]
	Thousand short tons							
	Atlantic Coast							
January	0.2	-	0.1	0.2	0.5	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-
April	0.7	1.1	0.9	0.6	0.2	1.1	1.0	0.2
May	18.0	12.8	5.4	3.9	1.1	1.9	2.7	2.5
June	30.5	12.9	12.2	12.6	4.6	6.6	7.1	4.8
July	23.2	13.5	11.7	8.8	6.0	6.0	10.9	6.7
August	15.7	11.6	11.5	12.7	7.2	6.8	7.1	4.6
September	12.3	9.8	7.2	7.5	5.8	3.5	4.9	3.2
October	23.8	6.1	4.4	6.5	5.7	4.5	8.3	7.1
November	6.5	8.9	7.2	8.5	14.8	10.2	9.2	7.1
December	0.3	6.3	5.0	6.1	7.1	6.2	6.2	
Total[3]	131.2	83.0	65.6	67.4	53.0	46.9	57.5	
	Gulf Coast							
January	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	-	0.1	-	-	-
April	3.3	4.0	2.0	6.7	3.7	3.7	3.2	4.4
May	13.9	22.0	17.3	14.9	12.9	8.4	8.8	20.7
June	23.1	16.7	27.5	27.8	22.5	16.7	15.4	23.3
July	25.0	18.0	22.3	30.4	18.9	18.6	21.7	26.5
August	18.0	24.4	14.5	20.7	12.4	16.4	18.4	20.1
September	15.0	9.8	10.8	7.5	11.4	7.5	14.4	22.4
October	9.4	6.3	0.3	0.6	-	0.9	4.0	3.7
November	0.8	[1]	-	-	-	-	-	-
December	-	-	-	-	-	-	-	
Total[3]	108.5	101.2	94.7	108.6	81.9	72.2	85.8	
	Total[3]							
January	0.2	-	0.1	0.2	0.5	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	-	0.1	-	-	-
April	4.0	5.1	2.9	7.3	3.8	4.8	4.3	4.6
May	31.9	34.8	22.7	18.8	14.0	10.3	11.5	23.2
June	53.6	29.6	39.7	40.4	27.1	23.3	22.4	28.1
July	48.2	31.5	34.0	39.2	24.9	24.7	32.6	33.2
August	33.7	36.0	26.0	33.4	19.7	23.2	25.4	24.7
September	27.3	19.6	18.0	15.0	17.2	11.0	19.3	25.6
October	33.2	12.4	4.7	7.1	5.7	5.4	12.4	10.8
November	7.3	8.9	7.2	8.5	14.8	10.2	9.2	7.1
December	0.3	6.3	5.0	6.1	7.1	6.2	6.2	
Total[3]	239.7	184.2	160.3	176.0	135.0	119.1	143.3	

[1]Includes a small amount of meal from other species.
[2]Preliminary.
[3]Figures may not add to total because of rounding.

Table 5.--Menhaden landings by area, January-October, 1964-68 average, 1968, and 1969

Area	1964-68 average		1968		1969[1]	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Middle Atlantic	78.6	6.4	74.0	6.2	34.6	2.4
Chesapeake	227.2	18.4	230.0	19.1	152.8	10.8
South Atlantic	79.8	6.5	74.2	6.2	75.9	5.3
Total Atlantic[2]	385.6	31.3	378.2	31.5	263.3	18.6
Gulf Coast	848.3	68.7	822.9	68.5	1,155.8	81.4
Total U.S.	1,233.9	100.0	1,201.1	100.0	1,419.1	100.0

[1]Preliminary.
[2]Figures may not add to total because of rounding.

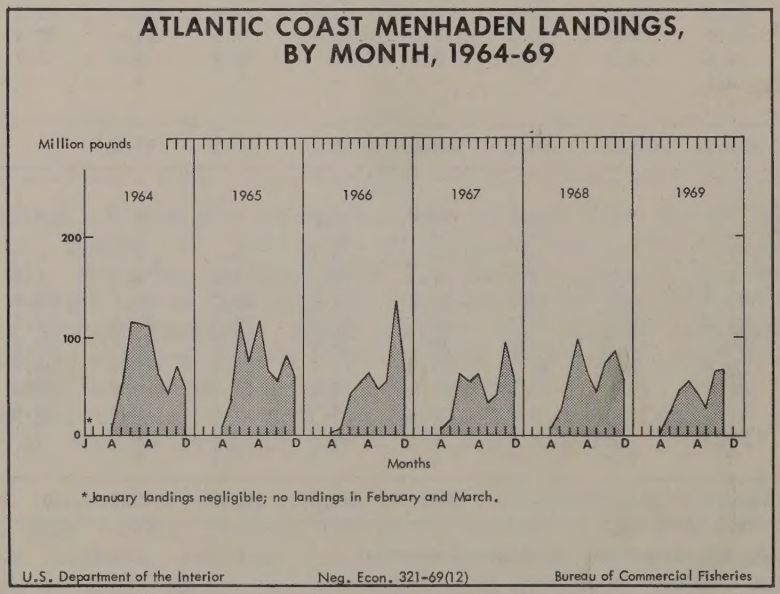


Figure 2

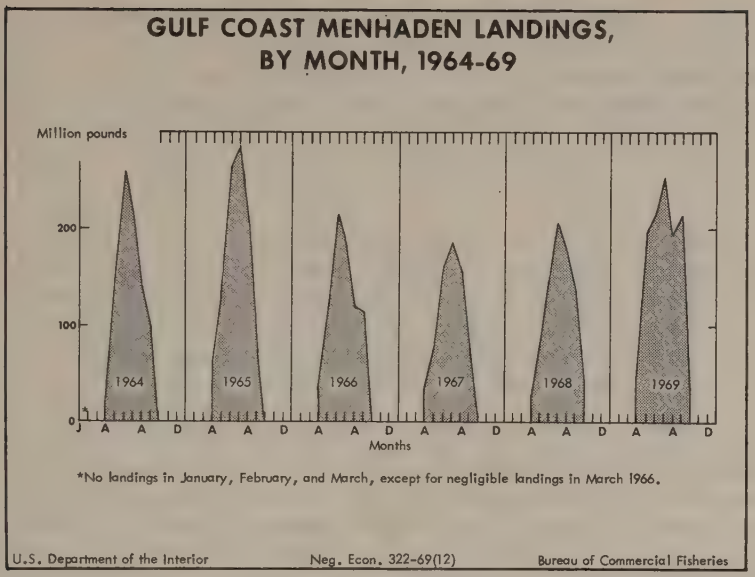


Figure 3

Whereas menhaden landings in the Gulf were a record high, landings on the Atlantic Coast for the first 10 months of 1969 were an all-time low. Atlantic Coast landings were 263.3 million pounds--down nearly one-third from 1968 and the 1964-68 average for January-October. Menhaden landings in the South Atlantic region were up slightly over last year, whereas landings in the Middle Atlantic region were less than half last year's landings, and landings in the Chesapeake Bay were down one-third from last year.

Production of menhaden meal in the Atlantic Coast area was 29,300 tons--also the lowest on record and following the same regional pattern as landings. The average amount of meal produced from a ton of fish was higher on the Atlantic Coast than on the Gulf Coast because the fish landed on the Atlantic Coast were larger.

Production of meal from anchovies and tuna and mackerel scrap was 28,900 tons in January-October--12 percent more than for the same months in 1968 and the highest on record for that period (table 3). One reason for this higher production is that landings in the California anchovy reduction fishery have been heavier. Landings in the fishery through October were about 31,000 tons--over six times greater than landings in the same period the year before. The California anchovy season began August 1 in the northern area and September 15 in the southern area and closes May 15, so

that the above figures include landings in the last half of the 1968-69 season. In the 1969-70 season, landings through October were about 17,300 tons--compared with only 4,400 tons in the same period of the 1968-69 season. Landings in November and December were over 31,000 tons--nearly four times landings in the same two months in 1968. This season, 29 vessels had licenses to operate in the anchovy fishery, whereas 17 had licenses last season.

The State of California originally placed a production quota of 75,000 tons on the anchovy fishery for the 1969-70 season. The quota recently was raised to 140,000 tons. If production were to continue at the current level through the rest of the season, the original quota would have been reached before May 15. The quota of 75,000 tons has not been caught in prior seasons since the fishery started in 1965.

Production of meal from sea herring was reported to be 5,500 tons in January-October--down 60 percent from 1968 and about half of average production for the 10-month period in the last 5 years. A sizeable portion of the sea herring was caught beyond United States territorial waters by Canadian, Icelandic, and Norwegian seiners, and transferred to United States vessels which landed them as imports.

Preliminary figures indicate U.S. production of fish meal in November was 12,400 tons--down 13 percent from November 1968. Production for the first 11 months was 214,500 tons--compared with 215,600 tons in January-November 1968.

Fish Meal Imports--Way Below Average

The United States imported 340,800 tons of fish meal in the first 10 months of 1969--less than half the imports in the same period in 1968 and down nearly one-fourth from the 1964-68 average (tables 6 and 7). The low imports are a result of a decreased demand for fish meal by feed mixers in response to unusually high fish meal prices. How the price of fish meal affects imports is shown in figure 4, which relates the quarterly imports of fish meal from Peru to the average quarterly price of Peruvian fish meal at New York City. Note that when the price of fish meal was above $170 per ton in the last two quarters of 1965 and in the third quarter of 1969, quarterly imports of fish meal were below 40,000 tons.

Table 6.--U.S. imports of fish meal by month, 1962-69

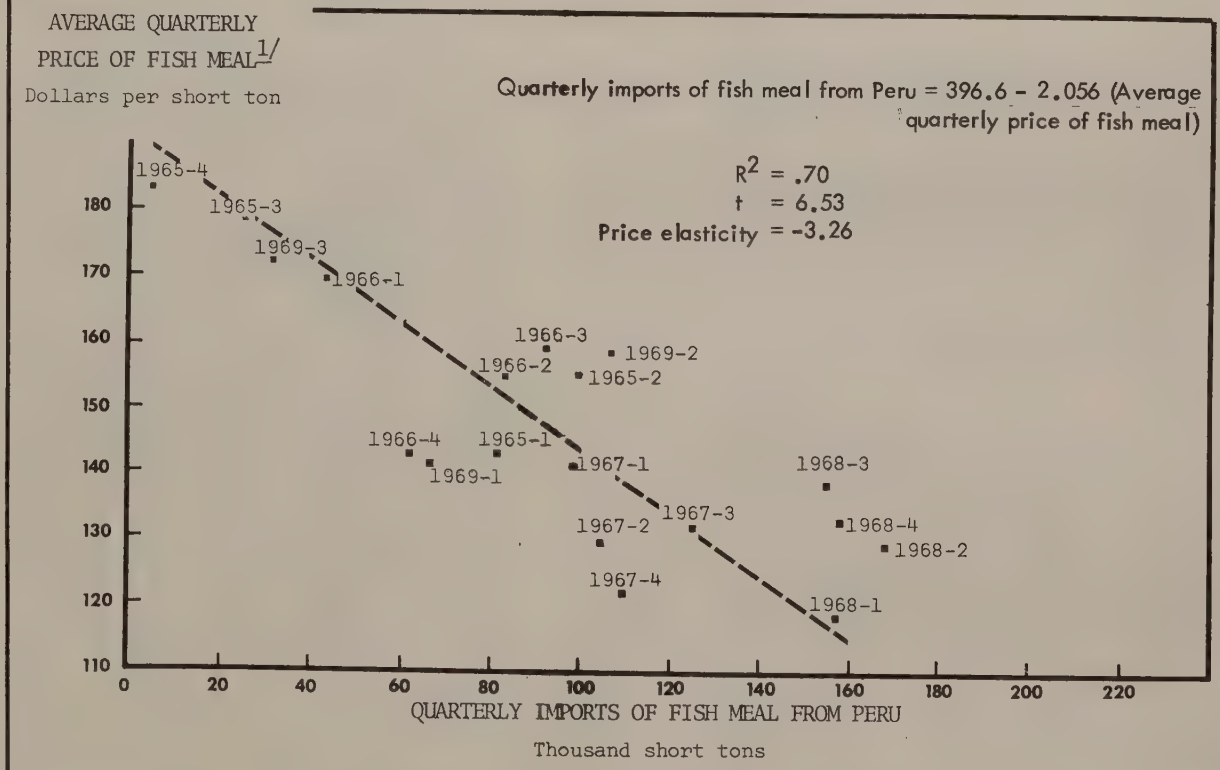
Month	1962	1963	1964	1965	1966	1967	1968[1]	1969[1]
	Thousand short tons							
January	25.4	18.5	31.0	16.0	15.3	42.0	90.9	27.2
February	18.8	40.1	35.3	25.5	25.2	44.4	49.0	27.6
March	18.5	40.5	40.1	53.7	33.6	74.1	54.7	45.2
April	26.4	26.6	56.0	39.7	39.5	50.0	62.3	58.0
May	25.3	31.1	59.5	30.5	35.0	39.0	70.4	45.1
June	26.5	18.5	34.5	44.5	45.6	40.6	80.9	53.6
July	25.9	43.2	28.9	18.7	49.0	47.6	91.7	36.8
August	28.3	44.0	36.5	13.9	59.4	74.8	87.4	18.3
September	13.7	35.3	34.1	6.8	43.3	55.7	49.3	9.3
October	12.7	31.4	19.7	4.8	35.4	50.1	48.8	19.7
November	11.9	17.4	25.7	5.7	35.7	63.0	70.7	6.6
December	19.0	29.7	37.8	11.0	30.8	70.2	99.3	
Total[2]	252.3	376.3	439.1	270.7	447.8	651.5	855.3	

[1]Preliminary.
[2]Figures may not add to total because of rounding.

Table 7.--U.S. imports of fish meal by country of origin, January-October, 1964-68 average, 1968, and 1969

Country of origin	1964-68 average		1968		1969	
	Thousand short tons	Percent	Thousand short tons	Percent	Thousand short tons	Percent
Canada	43.7	9.9	54.5	8.0	59.9	17.6
Chile	40.5	9.1	85.3	12.4	58.9	17.3
Norway	26.5	6.0	33.1	4.8	6.6	1.9
Peru	321.6	72.6	503.4	73.5	211.2	62.0
South Africa and South West Africa	4.5	1.0	-	-	-	-
Other	6.1	1.4	9.1	1.3	4.2	1.2
Total	442.9	100.0	685.4	100.0	340.8	100.0

RELATION BETWEEN U.S. IMPORTS OF FISH MEAL FROM PERU AND THE PRICE OF FISH MEAL



1/ Peruvian, 65 percent protein, bagged, f.o.b. East Coast ports. Numbers on chart indicate year and quarter of observation.

U.S. Department of the Interior | Neg. Econ. 323-69(12) | Bureau of Commercial Fisheries

Figure 4

Peru remained the major supplier of fish meal to the United States in the 10-month period, but the share of imports from that country dropped from 73 percent in 1968 to 62 percent last year. Imports from Peru were 211,200 tons--only two-fifths of imports from that country in 1968 and down more than a third from the 1964-68 average (table 7 and fig. 5). Imports in September were only 330 tons--the lowest monthly imports on record.

Imports from Canada in January-October increased 10 percent over 1968 and upped its share of total imports from 8 percent in 1968 to 18 percent in 1969. Imports from that country in the first 10 months have increased steadily since 1965 from 36,900 tons in that year to 59,900 tons last year.

Even though imports from Chile were down nearly one-third from 1968, the share of total imports supplied by that country increased from 12 percent to 17 percent. Imports from Chile were 45 percent more than the 1964-68 average.

The United States imported only 6,600 tons of fish meal from Norway in the first 10 months of 1969--only one-fifth of the previous year's imports and one-fourth of average imports during the last 5 years (table 7 and fig. 5).

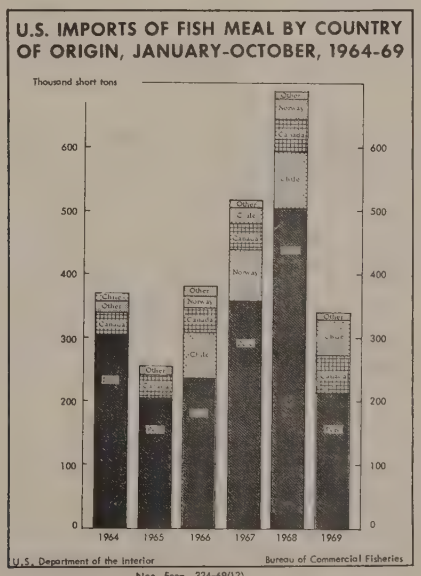


Figure 5

Table 8.--U.S. imports of fish meal as a percent of total fish meal available in the United States[1], by month, 1962-69

Month	1962	1963	1964	1965	1966	1967	1968	1969
	Percent							
January	89.8	88.9	93.6	83.3	84.5	88.0	97.3	91.9
February	83.9	93.2	93.9	89.8	91.6	91.9	94.6	89.6
March	81.5	93.8	92.8	93.4	85.7	93.7	92.4	91.9
April	73.7	76.0	87.4	77.8	77.8	83.3	84.2	82.2
May	38.4	43.6	65.0	54.8	63.3	69.4	78.7	61.0
June	30.2	34.4	41.3	47.8	55.2	54.8	72.5	62.2
July	31.8	52.6	39.0	27.2	57.3	56.7	67.4	49.7
August	41.2	50.2	52.1	24.9	65.4	69.0	70.7	36.8
September	30.2	58.8	59.9	24.4	65.1	73.3	62.5	22.4
October	26.1	62.9	69.6	28.1	76.3	81.5	70.7	52.6
November	53.8	56.5	70.6	32.0	65.3	80.4	83.3	34.6
December	87.6	74.8	83.1	52.4	72.0	88.6	90.1	
Average[2]	45.8	60.9	66.1	52.8	67.8	76.4	79.0	

[1]Production and imports.
[2]Weighted average.

World Production Down From 1968

World production of fish meal in January-October was an estimated 2,792,500 metric tons (3,078,200 short tons)--down 14 percent from 1968 but up 3 percent from the 1964-68 average for the 10-month period (table 9). These comparisons do not include Mainland China, the U.S.S.R., or countries that do not report on a monthly basis, such as Japan, Morocco, the Netherlands, and Spain. Major countries producing less in the first 10 months of 1969 than in 1968 were Chile, Denmark, Norway, Peru, South Africa, and South West Africa. FEO countries accounted for nearly all of the decline in world meal production. Angola, Canada, West Germany, Iceland, and the United States made more meal the first 10 months of last year than the year before.

FEO countries made 78 percent of the reported world meal in the first 10 months of 1969--slightly below the average percent for the last 5 years (table 9). Peru produced 44 percent of the world meal--again about the same as the average for the last 5 years. The United States produced 7 percent of the world fish meal, the same as in previous years.

FEO Production--Down Nearly One-Fifth From Last Year

FEO countries produced an estimated 2,176,800 metric tons (2,399,500 short tons) of fish meal in January-October 1969--down 17 percent from 1968 but down only slightly from the 1964-68 average for the 10-month period (table 9). Production in Chile was down 27 percent from 1968; production in Norway, down 16 percent; Peru, 22 percent; and South Africa and South West Africa, 14 percent.

Peru produced 1,221,900 metric tons (1,346,900 short tons) or 56 percent of total FEO production--slightly below the average percent for the last 5 years. Before the close of the fishing season on May 31, Peru's production was running about 9 percent ahead of the average for the last 5 years. Production in the 3 months during which most of the fishing ports were closed was only about one-fourth of average production for the 3-month period in 1964-68. Production in September and October was 59 percent below production for the same 2 months in 1968 and 22 percent below the most recent 5-year average for the 2 months. In those months, catches of anchoveta were below average because of warmer-than-usual waters off Peru. Warm waters cause the anchoveta to go deeper, making them difficult to catch. Also, the yield of fish meal per ton of anchoveta has been down because of heavier landings of smaller fish.

Table 9.--FEO[1] and total world production of fish meal, January-October, 1964-68 average, 1968, and 1969

Country	1964-68 average		1968		1969[2]	
	Thousand metric tons	Percent	Thousand metric tons	Percent	Thousand metric tons	Percent
Angola	40.4	1.9	37.5	1.4	[2]75.0	3.5
Chile	129.1	5.9	168.2	6.4	122.2	5.6
Iceland	107.2	4.9	50.4	1.9	[2]75.0	3.5
Norway	331.3	15.2	361.5	13.8	305.3	14.0
Peru	1,261.7	57.9	1,571.7	59.8	1,221.9	56.1
South Africa and South West Africa	309.2	14.2	439.4	16.7	377.4	17.3
Total FEO	2,178.9	100.0	2,628.7	100.0	2,176.8	100.0
Total world[4]	2,704.5		3,262.4		2,792.5	
Percent FEO is of world		80.6		80.0		78.0

[1]Fishmeal Exporters Organization.
[2]Preliminary.
[3]Estimated.
[4]FEO countries plus Belgium, Canada, Denmark, France, Sweden, the United Kingdom, the United States, and West Germany. Japan and the U.S.S.R. are not included for 1968 and 1969.

South Africa and South West Africa produced 377,400 metric tons (416,000 short tons) in January-October--down 14 percent from 1968 but up 22 percent from the 1964-68 average. South West Africa imposed a 3-month closed season beginning November 1, 1969, and plans to continue this closed season during the same period in years to come. The country has also stepped up surveillance activities in order to enforce its 12-mile fishing limit. The purpose of these measures is to help conserve the pilchard resource off the coast of South West Africa.

Norway's production in the first 10 months of 1969 was 16 percent below 1968 and 8 percent below the most recent 5-year average. Landings of capelin, mackerel, Norway pout, and other industrial fishes continued to partially offset the decline in herring.

Angola's estimated production for January-October was double the production in the same period in 1968, and the estimated amount produced by Iceland was nearly 1-1/2 times 1968.

Production in Canada Increasing Steadily

In the first 10 months of last year Canada produced 112,100 metric tons (123,600 short tons) of fish meal--9 percent more than in the same period in 1968 and 1-1/2 times the average for 1964-68. In 1962 and 1963, production in the 10-month period was about 65,000 metric tons. Production dropped to 44,600 tons in 1964, and then increased sharply to 72,200 tons in 1965. Most of Canada's meal is made from herring.

FEO Exports Well Above Average

FEO countries exported an estimated 2,244,900 metric tons (2,474,600 short tons) of fish meal in January-October--down 12 percent from 1968 but up 13 percent from the 1964-68 average (tables 10 and 11). Exports from Peru were down 12 percent from the previous year and accounted for 61 percent of the decline in FEO exports. Norway's exports were down nearly one-third, and exports from South Africa and South West Africa were down one-sixth (table 11). We estimate that exports from Angola were over twice what they were in 1968 in the 10-month period.

In the past, the United States has been a major market for Peruvian fish meal; this year West Germany and other EC countries became more important markets. In the first 10 months of 1969, only 13 percent of Peru's exports came to the United States--compared to 28 percent in the first 10 months of 1968 and 26 percent in 1967 (table 11). On the other hand, West

Table 10.--Total FEO[1] exports of fish meal, and FEO exports to the United States, by month, 1964-68 average, 1968, and 1969

Month	1964-68 average			1968			1969[2]		
	Total FEO exports	FEO exports to the United States[3]		Total FEO exports	FEO exports to the United States[3]		Total FEO exports	FEO exports to the United States[3]	
	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent
January	208.8	31.4	15.0	279.5	79.0	28.3	214.9	18.6	8.6
February	195.2	29.0	14.9	283.8	41.5	14.6	244.7	18.9	7.7
March	232.0	41.6	18.4	260.9	44.7	17.1	278.6	35.7	12.8
April	213.6	40.9	19.1	259.8	52.8	20.3	280.4	47.8	17.0
May	211.6	38.0	18.0	246.4	56.7	23.0	310.1	37.3	12.0
June	208.7	40.4	19.4	277.8	68.7	24.7	239.8	44.8	18.7
July	212.0	38.0	17.9	277.5	77.0	27.7	235.1	28.3	12.0
August	174.9	44.0	25.2	198.9	71.0	35.7	163.9	9.1	5.5
September	162.7	29.5	18.1	230.1	37.0	16.1	125.6	0.5	0.4
October	170.8	23.8	13.9	248.4	35.5	14.3	151.9	10.1	6.6
November	190.7	32.6	17.1	287.8	59.7	20.8			
December	231.8	41.0	17.7	291.4	84.6	29.0			
Total[5]	2,412.8	430.4	17.8	3,142.3	708.2	22.5			

[1]Fishmeal Exporters Organization: members are those countries listed in table 9.
[2]Preliminary.
[3]Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.
[4]Estimated.
[5]Figures may not add to total because of rounding.

Table 11.--Total FEO[1] exports of fish meal, and FEO exports to the United States by member country, January-October, 1964-68 average, 1968, and 1969

Country	1964-68 average			1968			1969[2]		
	Total FEO exports	FEO exports to the United States[3]		Total FEO exports	FEO exports to the United States[3]		Total FEO exports	FEO exports to the United States[3]	
	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent
Angola	39.4	0.1	-	35.5	-	-	[4]85.0	-	-
Chile	116.9	36.8	31.5	146.8	77.4	52.7	136.3	53.5	39.2
Iceland	102.3	-	-	57.1	-	-	[4]63.0	-	-
Norway	259.8	24.0	9.2	365.9	30.0	8.2	290.4	6.0	2.4
Peru	1,257.7	291.8	23.2	1,644.4	456.6	27.8	1,448.6	191.6	13.2
South Africa and South West Africa	214.2	4.1	1.9	313.6	-	-	261.6	-	-
Total[5]	1,990.3	356.7	17.9	2,563.3	564.0	22.0	2,244.9	251.1	11.2

[1]Fishmeal Exporters Organization: members are those countries listed in the table.
[2]Preliminary.
[3]Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.
[4]Estimated.
[5]Figures may not add to total because of rounding.

Germany took 23 percent of Peru's fish meal in January-October last year--compared with 18 percent the previous year and 19 percent in 1967. The use of fish meal in West Germany was encouraged by a law which required that a certain amount of fish meal be included in mixed feeds. The law was rescinded on December 19.

About 11 percent of all FEO exports came to the United States in January-October 1969--compared with 22 percent in 1968 (tables 11 and 12). EC countries received an estimated 39 percent of FEO exports in the first 10 months last year--compared with 33 percent the year before. About 44 percent of Peru's exports went to the EC countries in 1969--compared with 35 percent in 1968.

Table 12.--FEO[1] exports of fish meal to the EC (European Communities), the United States, and other countries, January-October, 1967, 1968, and 1969

Country	1967		1968		1969[2]	
	Thousand metric tons	Percent	Thousand metric tons	Percent	Thousand metric tons	Percent
EC						
Belgium	61.5	3.0	51.6	2.0	49.4	2.2
France	63.2	3.0	62.3	2.4	51.6	2.3
Germany, West	379.2	18.2	449.7	17.5	478.5	21.3
Italy	94.3	4.5	96.8	3.8	89.4	4.0
Netherlands	134.4	6.4	192.7	7.5	208.8	9.3
Total[3]	(732.6)	(35.1)	(853.1)	(33.3)	(877.7)	(39.1)
United States	427.2	20.4	564.0	22.0	251.1	11.2
Other						
Australia	15.2	0.7	23.7	0.9	24.7	1.1
Czechoslovakia	44.0	2.1	35.7	1.4	27.6	1.2
Finland	17.1	0.8	24.9	1.0	25.7	1.2
Germany, East	66.3	3.2	77.3	3.0	65.2	2.9
Hungary	10.1	0.5	20.2	0.8	29.2	1.3
Japan	68.2	3.3	117.1	4.6	86.3	3.8
Mexico	46.4	2.2	70.5	2.7	51.0	2.3
Poland	51.8	2.5	82.3	3.2	94.1	4.2
Spain	91.8	4.4	94.3	3.7	126.4	5.6
Sweden	37.1	1.8	46.4	1.8	52.2	2.3
United Kingdom	291.8	14.0	352.2	13.7	296.4	13.2
Venezuela	17.8	0.8	27.9	1.1	23.9	1.1
Yugoslavia	51.1	2.4	40.3	1.6	52.2	2.3
Other	122.0	5.8	133.4	5.2	160.9	7.2
Total[3]	(930.7)	(44.5)	(1,146.2)	(44.7)	(1,116.1)	(49.7)
Total	2,090.4	100.0	2,563.3	100.0	2,244.9	100.0

[1]Fishmeal Exporters Organization.
[2]Figures for Angola and Iceland were estimated.
[3]Figures may not add to total because of rounding.

Estimated Stocks on November 1--Lowest in Nearly 4 Years

Stocks of fish meal held by FEO countries on November 1, 1969, were an estimated 307,300 metric tons (338,700 short tons)--down 57 percent from the same time in 1968 and the lowest stocks since December 1, 1965 (table 13 and fig. 6). In 1969, stocks were highest on May 1--659,900 metric tons. They declined steadily to an estimated 248,000 metric tons on September 1 and then increased to the November 1 figure.

Peru's stocks were 42 percent of total FEO stocks on November 1--compared with 70 percent on January 1, 1969, and 68 percent on November 1 the previous year (table 13). The relatively low level of Peruvian and FEO stocks is one of the factors underlying the high fish meal prices throughout the world.

Table 13.--FEO[1] fish meal stocks held November 1, 1964-68 average, 1968, and 1969

Country	1964-68 average		1968		1969[2]	
	Thousand metric tons	Percent	Thousand metric tons	Percent	Thousand metric tons	Percent
Angola	4.5	0.8	8.8	1.2	[3]3.4	1.1
Chile	19.7	3.5	30.9	4.3	7.5	2.4
Iceland	27.4	4.9	3.1	0.4	[3]9.4	3.1
Norway	137.2	24.6	111.6	15.7	98.7	32.1
Peru	300.6	54.0	487.1	68.3	129.3	42.1
South Africa and South West Africa	68.1	12.2	72.3	10.1	59.0	19.2
Total	557.5	100.0	713.8	100.0	307.3	100.0

[1]Fishmeal Exporters Organization: members are those countries listed in the table.
[2]Preliminary.
[3]Estimated.

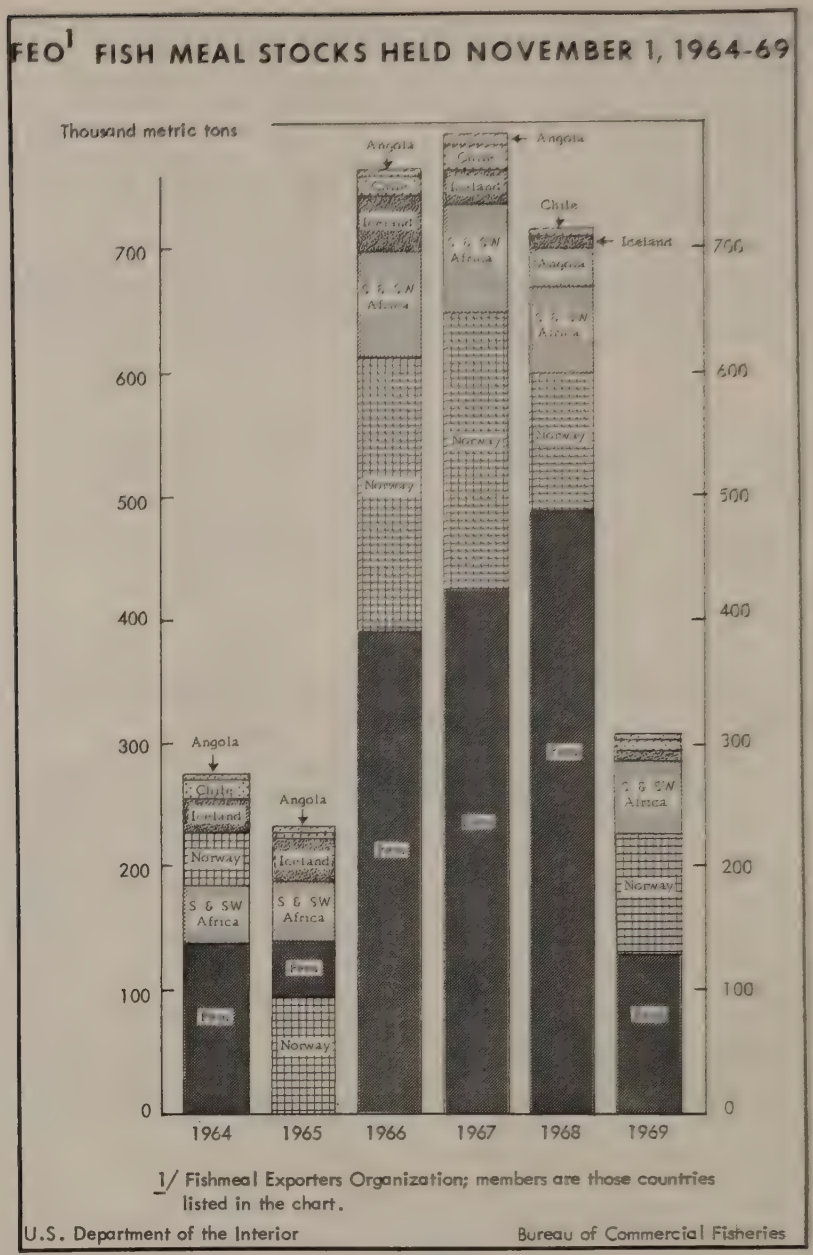

FEO[1] FISH MEAL STOCKS HELD NOVEMBER 1, 1964-69
Thousand metric tons
700
600
500
400
300
200
100
0
Angola
Chile
Iceland
Norway
S & SW Africa
Peru
1964
1965
1966
1967
1968
1969
1/ Fishmeal Exporters Organization; members are those countries listed in the chart.
U.S. Department of the Interior
Bureau of Commercial Fisheries

Figure 6

Broiler Placements--Up 8 Percent From Last Year

2.36 billion broiler chicks were placed on farms in the leading broiler-producing States in the first 10 months of 1969 (table 14). These placements were 8 percent more than in the same period in 1968 and 13 percent more than the 1964-68 average. September placements were 15 percent more than in the same month the year before, and October placements were 11 percent more. Preliminary estimates put placements in November and December 12 percent over 1968. These higher broiler placements have provided a ready market for prepared feeds and the ingredients that go into those feeds. Unfortunately, because of high prices, fish meal has not been able to take advantage of this increased market, but has been replaced by such ingredients as soybean meal, meat meal, and synthetic methionine and lysine.

Prices paid for broilers at the farm jumped to an average of 17.3 cents per pound in July--12 percent more than in the same month in 1968 and the highest average monthly price since February 1961. Prices began to drop after July, and by October were averaging 14.7 cents per pound. The average for November was 14.2 cents per pound. Though prices were falling in August-November, they were well above prices in comparable months over the last few years.

Table 14.--Broiler chick placements in 22 States, and average broiler price at the farm, by month, 1966-69

Month	1966		1967		1968		1969[1]	
	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price
	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.
January	191.6	16.3	192.0	13.9	196.4	13.5	200.3	14.3
February	199.0	16.4	204.1	15.4	199.5	14.6	210.9	15.0
March	201.3	17.2	217.6	14.3	261.0	14.6	282.3	15.3
April	269.6	15.8	272.9	13.8	215.1	14.2	234.2	14.7
May	217.8	16.7	217.6	13.3	274.1	14.6	296.1	14.8
June	216.6	16.1	214.8	13.5	218.7	15.0	235.3	15.2
July	262.0	16.1	259.6	14.7	208.5	15.5	220.8	17.3
August	192.6	15.7	199.9	12.9	248.5	14.8	265.4	16.5
September	187.0	14.6	224.7	12.6	178.3	14.1	205.1	15.6
October	235.3	13.2	175.0	12.2	184.6	12.8	205.2	14.7
November	188.8	13.5	185.7	11.5	242.1	13.6	271.6	14.2
December	232.7	12.0	230.8	11.6	194.8	13.4	219.8	
Total placements[2] and average price[3]	2,594.4	15.3	2,594.7	13.4	2,621.7	14.3	2,846.9	

[1] Preliminary.
[2] Figures may not add to total because of rounding.
[3] Weighted average.

Sources: Commercial Broilers: Annual Production and Weekly Placements, U.S. Department of Agriculture, Statistical Reporting Service, and Poultry and Egg Situation, U.S. Department of Agriculture, Economic Research Service.

Soybean Meal Prices--Consistently Below Last Year

Because soybean meal is a major competitor of fish meal in the protein feed market, prices of that ingredient are an important determinant of fish meal consumption in the United States. Soybean meal prices in the first 11 months of 1969 averaged below the previous year (table 15). Compared with the same month in the previous year the average price of 50 percent soybean meal at Decatur, Ill., was $1.80 per ton lower in January 1969, 90 cents lower in June, $12.80 lower in September, and $2.50 lower in November.

In December, prices of soybean meal increased markedly. For example, Decatur prices increased from an average of $80.50 per ton on December 9, to $95.00 on December 16--an 18 percent increase. Reasons given for the rapid price increase were a scarcity of cotton-seed meal and fish meal, a sudden shortage of cash soybean meal for quick shipment, lack of boxcars and hopper cars when needed, and expiring short positions in the December soybean meal futures at Chicago.

Table 15.--Average monthly price of soybean meal[1] at Decatur, Ill., 1964-69

Month	1964	1965	1966	1967	1968	1969
	Dollars per short ton					
January	85.40	75.40	85.00	89.30	81.30	79.50
Febraury	82.60	77.20	86.20	85.20	80.20	78.40
March	82.30	76.10	80.00	83.70	80.40	80.10
April	80.00	78.40	82.40	80.70	80.90	81.30
May	74.20	77.70	89.00	80.10	81.90	84.90
June	73.20	85.10	101.00	87.20	89.10	88.20
July	72.90	86.00	104.10	85.00	92.00	86.20
August	71.00	80.50	106.10	86.90	94.50	84.10
September	77.10	89.20	97.90	87.60	95.50	82.70
October	76.80	80.80	91.50	78.20	85.30	82.10
November	72.70	84.50	86.40	78.10	79.40	76.90
December	75.50	78.30	92.70	79.40	79.40	90.40
Average[2]	77.00	80.75	91.85	83.45	85.00	82.90

[1]50 percent protein, bulk.
[2]Simple average.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division.

Whereas apparent use of fish meal in the first 10 months was down considerably from the previous year, consumption of soybean meal was up about 6 percent. The shortage of fish meal has also reportedly increased the demand for other protein ingredients such as meat and bone meal and synthetic lysine and methionine.

Compared with prices of fish meal, prices of competing feed ingredients have encouraged the use of those ingredients in recent months. Ratios of the price of fish meal to the price of soybean meal, a major indicator of the degree to which fish meal will be used in feed mixes are presented in table 16. In September 1968, the ratio was at the relatively low level of 1.39 to 1. The ratio then increased steadily to 2.35 to 1 in October, topping the previous high of 2.3 in December 1965. In November the ratio advanced still further to 2.63 to 1.

Table 16.--Ratio of Peruvian fish meal price[1] to soybean meal price[2], by month, 1962-69

Month	1962	1963	1964	1965	1966	1967	1968	1969
	Price ratio							
January	1.78	1.67	1.56	1.88	2.04	1.66	1.48	1.75
February	1.96	1.60	1.61	1.88	1.98	1.64	1.48	1.80
March	1.91	1.60	1.61	1.88	2.07	1.61	1.44	1.75
April	1.91	1.60	1.58	1.89	1.86	1.62	1.42	1.80
May	1.80	1.61	1.70	1.98	1.75	1.59	1.61	1.90
June	1.64	1.55	1.72	1.96	1.54	1.50	1.57	1.90
July	1.57	1.49	1.78	2.01	1.55	1.55	1.56	2.01
August	1.55	1.40	1.87	2.25	1.52	1.51	1.46	2.05
September	1.38	1.42	1.75	2.04	1.56	1.47	1.39	2.08
October	1.66	1.53	1.82	2.29	1.56	1.59	1.51	2.36
November	1.66	1.51	1.95	2.20	1.68	1.55	1.65	2.63
December	1.67	1.55	1.87	2.30	1.64	1.52	1.74	2.26
Average	1.69	1.54	1.71	1.92	1.70	1.56	1.54	1.89

[1]F.o.b. East Coast ports for 65 percent protein meal, bagged, as quoted at New York City.

[2]Wholesale at Decatur, Ill., for 50 percent solvent meal, bulk.

Fish Meal Prices--Highest Ever

Average monthly prices of fish meal in the United States were the highest on record in the last 3 months of 1969. In October, the average price of bagged menhaden meal as quoted by brokers at New York City was $189.30 per ton, f.o.b. East Coast points, topping the previous high of $186.00 per ton in November and December of 1965 (table 17 and fig. 7). In November and December of 1969, prices of menhaden meal were averaging about $200 per ton. The most marked rise in menhaden meal came in October, when prices increased over $23 from $178 per ton, f.o.b. East Coast and Gulf points in the first week, to $201.50 per ton the last week of that month.

New York prices of Peruvian fish meal followed the same pattern as menhaden meal prices (table 18 and fig. 8). Again October was the month of the biggest change, with prices increasing from $185 per ton, f.o.b. East Coast ports in the first week of October, to $208.50 per ton in the last week of October. Prices in November and December were running $200 to $210 per ton. Very little Peruvian meal was available for sale at these prices. Whereas prices for menhaden meal traditionally have been higher than prices for Peruvian meal, this situation was reversed beginning with July of this year.

Table 17.--Average monthly price of menhaden meal[1], f.o.b. East Coast and Gulf points, 1964-69

Month	1964	1965	1966	1967	1968	1969
	Dollars per short ton					
January	132.00	144.15	[2]179.80	153.10	[2]131.00	149.25
Febraury	130.00	146.25	[2]172.55	[2]154.00	[2]131.00	153.00
March	128.25	150.00	[2]170.60	[2]154.00	[2]131.00	153.00
April	128.00	153.00	[2]163.00	135.00	[2]131.00	[2]154.00
May	128.25	156.00	[2]153.80	135.80	[2]131.00	174.00
June	129.80	160.90	160.35	139.00	149.00	172.60
July	130.90	170.25	164.00	137.40	149.65	171.90
August	131.00	172.10	169.00	137.10	149.00	168.90
September	132.90	175.00	166.20	136.75	145.00	171.60
October	140.20	185.40	160.00	136.00	141.60	189.30
November	140.75	186.00	151.15	[2]132.00	140.50	200.10
December	140.75	186.00	153.10	[2]131.60	145.10	199.25
Average[3]	131.45	168.50	161.05	136.55	145.30	[4]174.40

[1]60 percent protein, bagged, as quoted by brokers at New York City.
[2]Nominal price as presented in the Oil, Paint and Drug Reporter.
[3]Average weighted by monthly production of menhaden meal.
[4]Estimated.

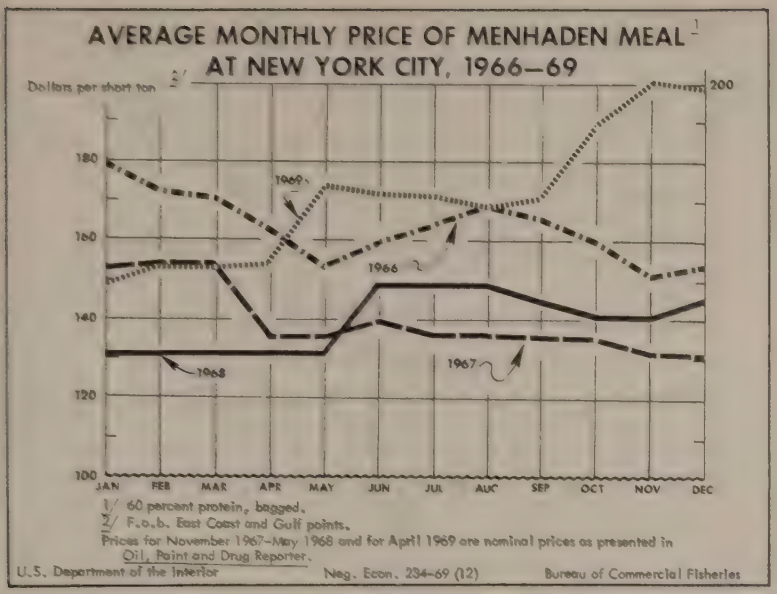


Figure 7

Table 18.--Average monthly price of Peruvian fish meal[1], f.o.b. East Coast ports, 1964-69

Month	1964	1965	1966	1967	1968	1969
	Dollars per short ton					
January	133.25	141.60	173.00	148.20	120.20	139.50
February	133.25	144.90	170.90	140.00	119.00	141.00
March	132.40	142.70	165.80	134.50	116.00	140.50
April	126.00	148.40	153.75	130.50	115.20	146.80
May	126.10	153.75	155.40	127.70	131.90	161.00
June	125.70	166.50	155.50	131.25	140.00	168.00
July	130.00	172.90	161.00	131.60	143.20	173.50
August	132.90	181.00	161.00	131.50	137.90	172.10
September	134.70	182.50	152.25	128.90	132.75	172.00
October	140.00	184.90	143.10	124.30	129.20	193.40
November	141.50	186.00	144.80	121.00	131.00	202.40
December	141.50	180.25	152.50	121.00	138.10	204.00
Average[2]	131.95	154.65	156.40	130.15	130.95	[3]157.00

[1]65 percent protein, bagged, as quoted by brokers at New York City.
[2]Average weighted by monthly imports of Peruvian fish meal.
[3]Estimated.

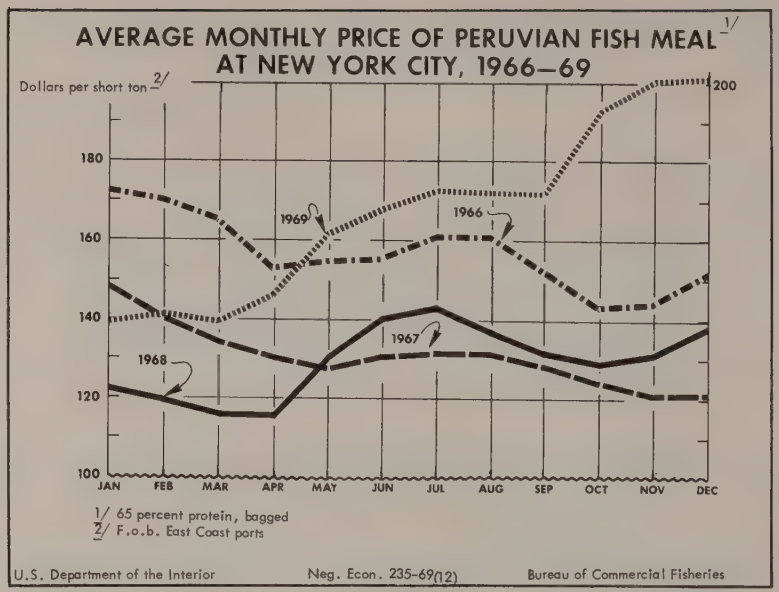


Figure 8

The reasons for the increase in prices of fish meal--first Peruvian and then menhaden--in the United States were very low supplies of fish meal in Peru, which was discussed previously, and low supplies of meal in the United States initiated by the dock strike at the beginning of the year.

The rising prices of Peruvian meal also influenced prices of domestic meal on the West Coast. Prices of meal made from anchovies and tuna and mackerel scrap increased from an average of $121.50 in April to $171.00 in November. The demand for that meal has been reported to be very good.

European prices of fish meal also increased markedly in the first 10 months of 1969. The price of Peruvian fish meal at Hamburg, Germany, increased from an average of $141 per metric ton in January to $213 in October. Between the middle of September and the middle of October, the price of Peruvian meal climbed from about $175 per metric ton to $220 per ton--a $45 increase. In November and the first half of December, prices fluctuated between $200 and $210 per ton. After the middle of December, prices dropped markedly from about $205 to $175 in the first part of January of this year. Factors influencing the upward movement of fish meal prices in Europe were the reported low stocks of fish meal in Peru, the 15-day strike in November by Peruvian fishermen, the poor catches of anchoveta in September

and October, the expectation of a closed fishing season in Peru, and the new taxes on fish meal and oil in Peru. Factors influencing the downward price movements were the good daily catches of anchoveta in December and the early part of January, and removing the law in West Germany on December 15 requiring the use of fish meal in mixed feeds.

OUTLOOK: JANUARY-MARCH 1970

Demand

The use of fish meal in the United States is determined primarily by the number of broiler chicks placed on feed, and prices of fish meal and competing feed ingredients. We estimate that about 775 million broilers will be placed on feed in the first quarter of 1970--12 percent more than the year before. Prices of fish meal in the United States will depend primarily on stocks and production of meal in Peru and other FEO countries. Recent catches by Peruvian fishermen of 100,000 metric tons per day indicate that production could be quite high for January. This high production could have a depressing effect on prices. However, it has also been reported that the Government of Peru is considering imposing a closed season beginning in February or March. A closed season would have the effect of holding prices up. If prices do not average below $185 per ton in the first quarter, and prices of soybean meal stay at about their current levels ($95-$100 per ton for 50 percent meal at Decatur), then less than 90,000 tons of fish meal will be used in the first 3 months of 1970. Last year apparent use in the first quarter was 109,600 tons and the year before was 204,300 tons. Utilization in the first quarter of 1969 was low because of the longshoremen's strike.

Supply

Supplies of fish meal in the United States during the first quarter of 1970 will be relatively low. Although the Bureau of Commercial Fisheries does not collect information on stocks of fish meal held in the United States, various feed market trade reports have indicated that supplies of fish meal in the first part of January are tight. First quarter production of fish meal in the United States is seasonally low. Last year, 9,600 tons of meal were produced in that period, and the most recent 5-year average was 10,500 tons. Production in the first 3 months of 1970 is expected to be

slightly over the 5-year average if anchovy landings off the coast of California continue to be as heavy as they were in the first 5 months of the 1969-70 season and if production of meal from other fish remains about the same as last year. As explained previously, anchovy landings in the first half of the season were nearly four times landings in the same period the year before. Little or no menhaden meal is produced in the first 3 months of the year. The 1969 menhaden season ended in December and normally does not begin again until April.

How much fish meal is sent to the United States by Peru and other major exporting countries is influenced by the level of stocks and potential production of fish meal in those countries, the market price of fish meal in the United States in relation to the price in other countries, prices of competing feed ingredients, and the relation between market conditions in the United States and other countries that are major users of fish meal.

As explained previously, prices of fish meal in the United States and throughout the world have been and are currently at a high level due primarily to the low stocks and production in Peru and other major producing countries, such as Chile, Norway, South Africa, and South West Africa. What happens to prices in 1970 depends on what happens with respect to production and stocks of fish meal in these countries. We estimate that Peru's stocks of fish meal on January 1, 1970, were 200,000 to 250,000 metric tons. These stocks would be about the same as those held at the end of 1965 when prices of fish meal were high and U.S. imports were relatively low. If stocks were to stay at this relatively low level and production of fish meal continues to be at levels recorded in September-November, then prices of fish meal in the United States and other countries probably would remain near the current level. However, current reports indicate that daily catches of anchoveta are averaging about 100,000 metric tons. If catches stay at this level through January, then production of fish meal for that month could be more than 400,000 metric tons--tripling the supplies available for export and local consumption. However, it has also been reported that Peru may institute a closed season in February or March, which would have the effect of holding down stocks, thereby creating an upward pressure on prices. Based on the estimated stock situation for Peru on January 1 and a continuation of relatively tight supplies in that country through the first 3 months, we estimate that Peru will ship 35,000 to 45,000 tons of fish meal to the United States in the first quarter and that the supplies of fish meal to the United States from other countries will not total more than 35,000 tons, so that total U.S. imports in the first quarter are estimated to be 70,000 to 80,000 short tons.

Therefore, total supplies of fish meal in the United States, excluding stocks on January 1, probably will be less than 90,000 short tons.

FISH SOLUBLES

REVIEW: JANUARY-OCTOBER 1969

Supply

Supplies of Fish Solubles--Up 11 Percent From Last Year

Total U.S. supplies of fish solubles (excluding stocks, which are not reported) in January-October were about 73,800 tons--11 percent more than supplies in 1968 but 7 percent less than the 1964-68 average (table 19). Nearly all the fish solubles were produced domestically. Production and imports in November last year were about 4,600 tons; the January-November total was 78,400 tons.

Fish Solubles Production Reverses a 7-Year Trend

Production of fish solubles declined steadily from 1962 to 1968. Production for the first 10 months was 107,200 tons in 1962, and 64,500 tons in 1968, or an average decrease of 6 percent per year over the 7-year period. In 1969, the 10-month production was 73,700 tons--14 percent more than in the first 10 months of 1968 (table 19). Seventy-eight percent of the domestic solubles was made from menhaden--compared with an average of 75 percent over the last 5 years. The Gulf Coast area produced four-fifths of the menhaden solubles. About 4,600 tons of fish solubles were produced in November last year--compared with 4,300 tons the year before.

Table 19.--U.S. production, imports, and total supplies of fish solubles, by month, 1964-68 average, 1968, and 1969

Month	1964-68 average			1968			1969[1]		
	Production	Imports	Total supplies	Production	Imports	Total supplies	Production	Imports	Total supplies
	Thousand short tons								
January	1.2	0.4	1.6	0.5	0.1	0.6	0.8	[2]	0.8
February	1.1	0.5	1.6	0.6	0.1	0.7	1.4	-	1.4
March	1.9	0.3	2.1	1.6	0.7	2.3	1.4	[2]	1.5
April	4.0	0.8	4.8	4.0	0.1	4.1	5.1	-	5.1
May	9.0	0.4	9.4	6.2	0.1	6.3	11.1	[2]	11.1
June	15.2	0.2	15.4	10.7	0.1	10.8	12.5	-	12.5
July	15.4	0.4	15.8	14.3	0.1	14.4	11.9	[2]	11.9
August	13.9	0.1	14.0	11.7	0.1	11.8	11.0	-	11.0
September	8.8	0.2	9.0	8.9	0.2	9.0	12.7	-	12.7
October	5.6	0.2	5.7	5.9	0.2	6.1	5.7	[2]	5.8
November	5.1	0.4	5.5	6.1	[2]	6.1	4.6	[2]	4.6
December	2.4	0.1	2.6	1.2	0.1	1.3			
Total[3]	83.6	3.9	87.5	71.8	1.8	73.6			

[1]Preliminary.
[2]Less than 50 tons.
[3]Figures may not add to total because of rounding.

Imports of Fish Solubles--Lowest on Record

Only 100 tons of fish solubles were imported in the first 10 months of 1969--by far the lowest on record. The previous low for the 10-month period was 1968--1,700 tons. In 1965-68, Peru was the major foreign supplier of fish solubles to the United States. In 1969, however, 85 percent of the imports were from Canada--compared to 39 percent in the previous year.

Only 20 tons of solubles were imported in November 1969, making total imports for the first 11 months 120 tons.

Table 20.--Average monthly price of menhaden solubles[1], f.o.b. East Coast plants, 1964-69

Month	1964	1965	1966	1967	1968	1969
	Dollars per short ton					
January	75.00	58.60	66.25	80.85	60.50	51.25
February	75.00	59.40	66.50	79.00	63.75	51.25
March	62.25	61.25	66.70	70.75	61.25	49.40
April	62.25	56.25	68.75	64.60	56.25	47.75
May	62.25	53.75	68.75	64.00	54.05	47.50
June	62.25	55.75	68.75	64.40	53.75	49.75
July	62.25	56.85	68.75	64.05	53.50	51.25
August	61.95	60.00	68.75	62.85	52.50	49.40
September	61.20	61.25	72.50	61.25	51.90	48.75
October	61.05	63.95	78.75	60.75	51.50	50.60
November	61.25	65.25	79.25	60.00	51.55	51.25
December	61.25	66.25	81.90	60.00	51.25	52.50
Average[2]	62.00	58.30	70.75	63.25	52.90	[3]49.50

[1]In tank cars; prices quoted by brokers at New York City.
[2]Weighted average.
[3]Estimated.

Demand

The demand for fish solubles is reflected in the prices of solubles. After dipping to the lowest level in nearly 5 years, the price of menhaden solubles as quoted by brokers at New York City rose from an average of $46.25 per ton, f.o.b. East Coast plants, in the latter part of April and the first part of May to $52.50 per ton in the latter part of November and December (table 30 and fig. 31). The demand for solubles increased after prices of fish meal increased substantially in the last half of the year.

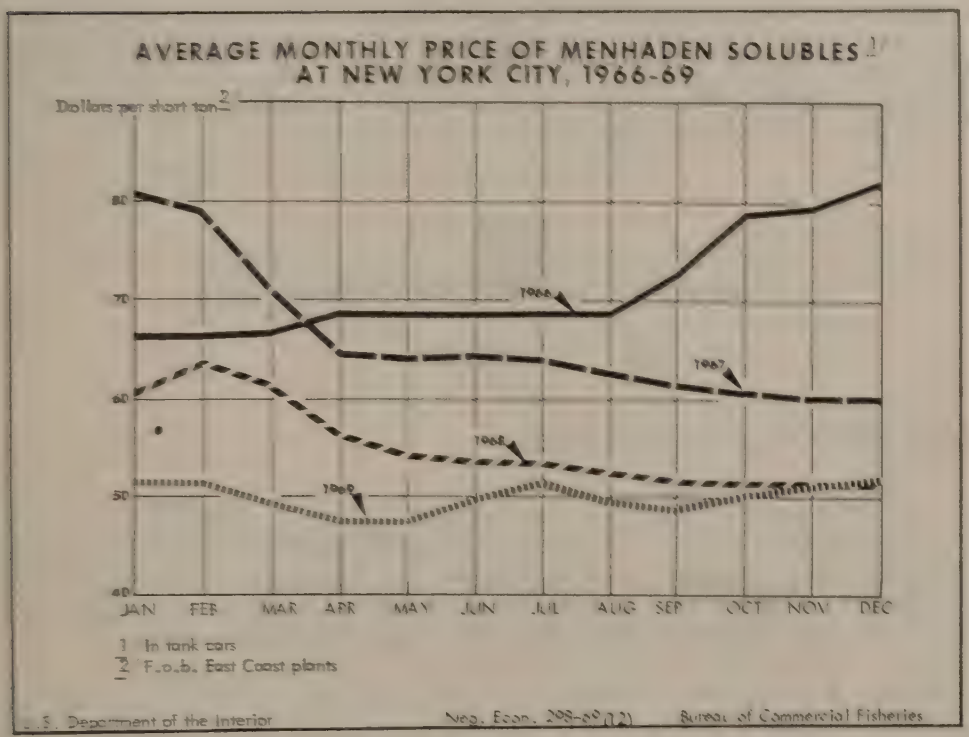


Figure 9

OUTLOOK: JANUARY-MARCH 1970

Production, imports, and the apparent use of fish solubles have never been very great in the first 3 months of the year. U.S. production in the first quarter ranged between 2,700 tons and 6,800 tons in the last 10 years. How much fish solubles is produced in the first quarter of 1970 will depend on the landings of fish other than menhaden, because very little or no menhaden are landed in that period. Production could be more than the 3,600 tons produced in the first quarter last year if West Coast landings of fish for reduction increase. However, with prices of fish meal averaging over three times greater than prices of solubles, producers of fish meal and solubles may add some solubles to the meal press cake, if they have a ready market for their meal.

First quarter imports over the last 10 years have ranged between 35 tons and 2,800 tons. In the first 11 months of 1969, only 121 tons were imported, nearly all from Canada. Imports of fish solubles probably will continue to be low in the first quarter of 1970, and the major supplying countries, Canada and Peru, probably will attempt to increase their production of fish meal at the expense of solubles.

FISH OIL

REVIEW: JANUARY-OCTOBER 1969

Supply

Fish Oil Stocks at 96 Million Pounds

The Bureau of the Census reports that stocks of crude and refined fish oil (including mammal oil, other than sperm) on November 1, 1969, were 98.4 million pounds (table 21). This is an increase of 18 million pounds or 26 percent over stocks held on October 1. However, the November 1 stocks were down 20 percent from the same time in 1968, 6 percent from the beginning of the year, and 1 percent from the 1964-68 average for November 1.

Table 21.--U.S. stocks of fish oil at the beginning of the month, 1964-69[1]

Month	1964	1965	1966	1967	1968	1969[2]
			Million pounds			
January	96.9	70.9	100.4	99.4	80.0	104.6
February	60.4	68.6	85.4	97.2	83.3	95.6
March	47.0	55.2	75.0	90.8	61.0	67.3
April	42.2	50.4	60.5	62.2	55.8	53.9
May	43.9	54.6	60.3	73.4	64.4	39.1
June	46.7	69.0	63.1	97.4	69.1	61.0
July	55.5	80.9	64.7	100.7	82.4	68.3
August	66.8	103.3	80.4	102.4	103.6	78.3
September	78.0	136.2	87.9	103.2	122.5	66.5
October	87.7	110.9	111.0	95.9	132.9	77.8
November	66.9	101.7	102.1	102.4	123.0	98.4
December	75.2	111.4	120.0	99.4	104.1	
Average	63.9	84.4	84.2	93.7	90.2	

[1]Includes mammal oil other than sperm oil, and includes hydrogenated fats and other fats and oils "in process."
[2]Preliminary.

Source: Current Industrial Reports: Fats and Oils, Series M20K, U.S. Department of Commerce, Bureau of the Census.

Production Up Slightly From 1968

The United States produced an estimated 155.9 million pounds of fish oil in the first 10 months of 1969--up only 1 percent from the year before and up 4 percent from the 1964-68 average for the 10-month period (tables 22 and 23). The 1969 figure includes about 1.6 million pounds of whale oil. About 90 percent of the fish oil was made from menhaden in the 10-month period--slightly above 1968 and the most recent 5-year average (table 23). About 86 percent of the menhaden oil was produced in the Gulf Coast area.

Table 22.--U.S. production of fish oil by month, 1962-69

Month	1962	1963	1964	1965	1966	1967	1968	1969[1]
	Million pounds							
January	0.8	0.5	0.5	0.6	0.4	1.2	0.6	0.9
February	0.4	0.4	0.2	0.5	0.2	0.6	0.3	0.5
March	0.4	0.4	0.7	0.7	1.0	0.9	0.6	0.6
April	5.7	6.5	4.4	10.6	5.5	3.6	4.2	5.4
May	33.4	33.5	29.9	23.2	19.3	9.4	10.3	20.8
June	54.9	28.2	42.9	41.6	34.7	20.5	22.0	27.2
July	47.7	29.0	33.8	41.6	29.6	21.6	36.8	29.3
August	33.4	34.6	28.4	37.8	22.5	22.4	31.1	29.0
September	31.2	21.2	19.8	18.1	20.5	13.6	27.4	28.2
October	39.0	15.0	5.6	9.5	7.8	9.3	21.0	13.9
November	8.3	10.1	8.3	8.2	16.4	13.5	12.3	8.2
December	0.7	6.4	5.7	3.1	6.8	5.8	6.5	
Total	255.9	185.8	180.2	195.5	164.7	122.4	173.1	

[1]Preliminary.

Table 23.--U.S. production of fish oil by raw material source, January-October, 1964-68 average, 1968, and 1969

Source	1964-68 average		1968		1969[1]	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Alewives	0.6	0.4	-	-	2	-
Groundfish	0.8	0.5	-	-	2	-
Herring	7.8	5.2	8.5	5.5	4.1	2.6
Menhaden	131.1	87.5	136.2	88.3	139.8	89.7
Tuna, mackerel, and anchovies	4.2	2.8	4.1	2.6	5.2	3.3
Unclassified	5.4	3.6	5.5	3.6	6.8	4.4
Total[3]	149.9	100.0	154.3	100.0	155.9	100.0

[1]Preliminary.
[2]Included in "unclassified."
[3]Figures may not add to total because of rounding.

Most of the remaining fish oil was made from anchovies and scrap from tuna and mackerel--5.2 million pounds compared to 4.1 million pounds in 1968. The rest of the oil was made from alewives, groundfish, sea herring, and thread herring, all of which is included in "unclassified," because of Government reporting regulations.

In November, the United States produced about 8.2 million pounds of fish oil--about 4 million pounds less than November 1968.

Demand

U.S. Use of Fish Oil Below Average

The United States used about 28 million pounds of fish oil in January-October in industrial products other than animal feed--8 percent more than in the same period in 1968 but 16 percent less than the average for the last 5 years (table 24 and fig. 10). This figure includes marine mammal oil other than sperm. In January-October 1961, utilization of fish oil was 54.2 million pounds or nearly twice the amount used in the same period in 1969. Since that time, the use of fish oil in industrial products in the United States has decreased steadily due mainly to the increased use of synthethic resins. The increase last year probably was due to the relatively low prices through the first 10 months.

The above figures do not include fish oil used in animal feeds. However, we expect that the amount used for this purpose was higher than in 1968 because prices of fish oil were lower relative to prices of fish meal, inedible tallow, and other competing ingredients. In addition to animal feeds, fish oil in the United States is used in such products as lubricants and protective coatings.

Exports of Fish Oil Well Above Average

The United States exported 135.7 million pounds of fish oil in January-October--over three times more than the previous year's exports and 60 percent more than the 1964-68 average (tables 25 and 26). These high exports are in response to a heavy demand for all oils in Europe and a shortage of some substitute oils. As in the past, nearly all of the exported oil was menhaden oil, although the proportion supplied by that oil was lower last year than in previous years--93 percent compared to 98 percent in 1968 and 99 percent the year before.

Table 24.--Industrial use of fish oil in the United States, by month, 1962-69[1]

Month	1962	1963	1964	1965	1966	1967	1968	1969[2]
	Million pounds							
January	5.2	5.0	3.9	3.2	2.4	2.9	2.6	1.8
February	5.0	3.8	3.9	3.2	3.5	2.8	2.6	3.1
March	5.3	3.9	3.9	3.3	3.3	2.8	3.0	3.1
April	5.3	4.0	4.6	3.4	3.5	4.1	2.5	3.2
May	5.5	4.2	4.2	3.0	3.7	3.1	2.6	1.9
June	6.3	4.7	4.0	4.0	3.8	3.3	2.5	3.9
July	5.0	5.0	3.4	3.2	2.7	3.0	2.7	2.2
August	5.0	4.6	4.7	4.5	3.7	3.1	2.2	2.5
September	5.2	4.2	4.2	4.3	3.9	3.2	2.8	3.3
October	5.3	5.0	3.8	3.9	2.5	2.4	2.5	3.0
November	4.8	3.7	3.6	4.4	2.7	2.5	2.4	3.3
December	5.0	4.0	3.5	4.1	3.1	2.6	1.6	
Total[3]	62.9	52.1	47.7	44.5	38.8	35.8	30.0	

[1]Includes mammal oil other than sperm oil.
[2]Preliminary.
[3]Figures may not add to total because of rounding.

Source: Current Industrial Reports: Fats and Oils, Series M20K, U.S. Department of Commerce, Bureau of the Census.

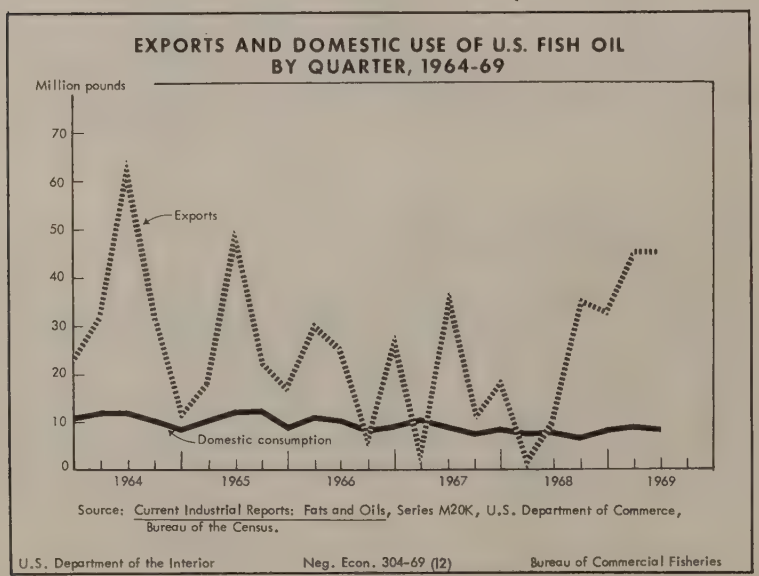


Figure 10

Table 25.--U.S. exports of fish oil by month, 1962-69

Month	1962	1963	1964	1965	1966	1967	1968	1969[1]
	Million pounds							
January	0.5	0.1	0.2	0.1	2.3	17.9	0.9	4.0
February	21.6	2.4	23.5	0.1	4.2	[2]	6.0	8.9
March	19.1	44.4	0.2	11.4	9.9	10.5	12.6	19.8
April	10.3	28.5	22.8	0.1	0.1	[2]	0.1	21.1
May	6.5	22.1	9.3	0.3	17.8	0.1	[2]	8.8
June	4.9	0.3	0.1	18.1	12.9	0.8	[2]	15.5
July	0.1	29.3	40.5	16.2	19.5	2.3	0.1	19.3
August	33.3	37.5	9.6	21.2	6.1	24.8	7.0	24.7
September	0.2	22.4	14.2	13.5	[2]	10.2	3.4	7.9
October	26.1	41.9	19.8	10.8	4.3	5.7	11.4	5.7
November	0.2	0.1	0.1	0.2	0.1	2.2	1.8	33.3
December	0.2	33.3	11.1	11.8	0.1	2.3	21.8	
Total	123.0	262.3	151.4	103.8	77.3	76.8	65.1	

[1]Preliminary.
[2]Less than 50,000 pounds.

Table 26.--U.S. exports of fish oil by country of destination, January-October, 1964-68 average, 1968, and 1969

Country	1964-68 average		1968		1969[1]	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Canada	0.9	1.1	1.6	3.9	1.2	0.9
Netherlands	22.1	26.1	4.1	9.9	79.0	58.2
Sweden	31.1	36.8	30.6	73.3	10.3	7.6
United Kingdom	6.2	7.3	[2]	-	6.3	4.6
West Germany	12.2	14.4	5.1	12.3	8.8	6.5
Other	12.1	14.3	0.1	0.2	30.1	22.2
Total[3]	84.6	100.0	41.5	100.0	135.7	100.0

[1]Preliminary.
[2]Less than 50,000 pounds.
[3]Figures may not add to total because of rounding.

Over half of the fish oil exports went to the Netherlands in the first 10 months--58 percent compared to only 10 percent in 1968 and a 5-year average of 26 percent. About 8 percent of United States fish oil went to Sweden in January-October--compared to 74 percent the year before. Most of the rest of the oil went to France, Japan, West Germany, and the United Kingdom. Nearly all of the 13.9 million pounds of fish oil exported in August went to Japan.

In addition to fish body oil, 2.4 million pounds of whale oil were exported in the first 10 months--compared to 1.5 million pounds in the same period in 1968 and a 5-year average of 3.6 million pounds. Most of this oil went to Canada.

In November, the United States exported 33.3 million pounds of fish oil--the heaviest monthly exports since July 1964. This amount was over half of all the fish oil exported in all 12 months of 1968. Exports in the first 11 months of 1969 totaled 169 million pounds--nearly 4 times greater than in the same period in 1968. Over half of the November exports went to the Netherlands.

Prices

Prices of menhaden oil as quoted by brokers at New York City increased significantly beginning in August last year. Oil prices increased from an average of 5.25 cents per pound, f.o.b. East Coast plants, in the first week of August, to 8.5 cents per pound the last 2 weeks of November and December (table 27 and fig. 11). As with menhaden meal, the biggest increase came in October, when prices increased 1 cent between the beginning and end of that month. The average price for November was 8.2 cents per pound--the highest average monthly price since March 1967. These high prices together with relatively heavy domestic use and export, indicate a favorable demand for U.S. fish oil.

Table 27.--Average monthly price of menhaden oil[1], f.o.b. East Coast plants, 1964-69

Month	1964	1965	1966	1967	1968	1969
			Cents per pound			
January	8.40	9.15	9.50	8.90	6.00	4.70
February	8.35	9.50	9.70	8.90	6.10	5.00
March	8.50	9.50	9.75	8.60	5.75	5.20
April	8.75	9.50	9.75	7.20	5.35	5.30
May	8.50	9.45	9.75	6.90	5.25	5.25
June	8.65	9.15	9.60	6.95	5.25	5.20
July	8.75	8.95	9.40	6.70	4.85	5.25
August	8.80	9.30	9.00	6.00	4.55	5.65
September	9.05	9.50	9.45	5.80	4.40	6.10
October	9.20	9.50	9.45	6.00	4.45	6.75
November	9.40	9.50	9.20	6.00	4.40	8.20
December	9.40	9.50	8.90	6.00	4.40	8.50
Average[2]	8.80	9.25	9.40	6.40	4.70	[3]5.80

[1]Crude oil in tank cars; prices quoted by brokers at New York City.
[2]Weighted average.
[3]Estimated.

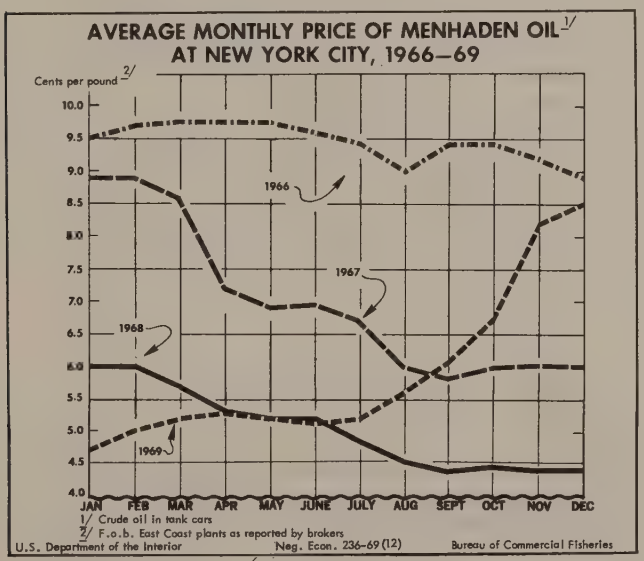


Figure 11

OUTLOOK: JANUARY-MARCH 1970

Demand

First quarter use of fish oil as reported by the Bureau of the Census has declined steadily since 1962. In the first quarter of 1962, the United States used 15.5 million pounds of fish oil, whereas in the first quarter last year only 8 million pounds were used. The above figures do not include fish oil used in animal feed. Even though utilization in the first 3 months of 1969 was below 1968, use in each of the succeeding 7 months was above the year before. Although we do not have figures on the amount of fish oil used in animal feed, the amount used in the first 10 months of 1969 was probably more than in the same period in 1968 due to the favorable prices of fish oil in relation to competing feed ingredients. Estimated total use of fish oil in 1969 in products other than animal feed probably will be about 32 million pounds. We estimate the United States will use 9 to 11 million pounds in the first quarter of 1970.

As explained previously, exports of fish oil in January-October last year were up markedly over the last few years. In November, exports were 33.3 million pounds or the highest monthly exports in over 5 years. Total exports for January-November 1969 were 169 million pounds, or nearly four times the exports in the same period in 1968. The price of Peruvian fish oil, c.i.f. European ports, in December 1969 was about $225 per metric ton--the highest price since the first part of 1966 and higher relative to the prices of most other competing oils when compared with the past few years. These higher prices, together with the increased exports, indicate a strong demand for fish oil in European countries. We do not have prices for menhaden oil as quoated in Europe. How foreign consumers react to these high prices in the first quarter of 1970 remains to be seen, but we estimate that U.S. exports of fish oil will be 30-35 million pounds--about the same as last year.

Supply

We estimate that U.S. stocks of fish oil on January 1, 1970, will be less than 70 million pounds, or the lowest first-of-year stocks in 9 years. Stocks on January 1, 1969 were 104.6 million pounds.

First quarter production of fish oil has ranged between 1.3 million to 2.7 million pounds in the last 10 years. Production in the first quarter of 1970 is estimated to be more than the 2 million pounds produced in the first quarter of last year due to the expected increase in production of oil from anchovies in California.

EC PROPOSAL FOR AN INTERNATIONAL AGREEMENT ON FATS AND OILS

In July 1969, the EC Commission submitted guidelines to the European Council for an international agreement on fats and oils. If approved by the Council, the guidelines could form the basis for a specific EC proposal for such an agreement to be negotiated under the auspices of the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Food and Agriculture Organization (FAO). The UNCTAD/FAO fats and oils study group, of which the United States is a member, met in London in January 1970 to initiate preliminary consideration of the EC proposal.

The Commission proposes that all developed importing countries apply a tax on imports of most oil-bearing materials including fish products, but excluding butter and olive oil. Further, the Commission advocates the removal of quota restrictions and the reduction of tariffs by developed countries. Finally, it advances the idea that target or reference prices for various products should be fixed and that the difference between the actual export price a developing country receives and the target price should be a variable levy paid on imports by developed countries. The proceeds of the tax collected in developed countries would go to the exporting developing countries to improve their export incomes, to stimulate the consumption of fats and oils within the exporting countries, to finance crop diversification away from production of fats and oils, to pay for food aid, and finally, to set up buffer stocks of the high-priced lauric oils to smooth out annual price fluctuations. A mechanism to avoid rampant increases in production in the exporting developing countries remains to be considered.

The proposal for the international fats and oils agreement has the support of the 18 African Associated States. These States are all associate members of the European Community and are among the chief developing countries that are exporters of fats and oils and oil-bearing materials.

The EC Commission feels that an international agreement on the marketing of fats and oils is needed to improve and stabilize world prices and to increase the export earnings of developing countries. However, the effect of such an agreement especially the tax and target price proposals, on the trade and prices of all the fats and oils and associated products such as fish meal and soybean meal needs to be studied very carefully. A special problem is the ease of substitution among some of the oils and between the natural oils and synthetics. Also long-term as well as the short-term effects on the developing countries should be considered.

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